第 68 回トポロジカル物質科学セミナー
Topological Materials Science Seminar (68)

Strain-tuning of the unconventional superconductor Sr_2RuO_4

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Place: Room 525, Graduate School of Science Bldg. 5,
North Campus, Kyoto Univ.
（京都大学 北部キャンパス 理学研究科 5 号館 525 号室）

Date: July 30 (Monday), 2018

Time: 10:30-12:00

Abstract:

In this talk I will discuss the response of the unconventional superconductor Sr_2RuO_4 to uniaxial stress. By using piezoelectric actuators to apply the stress in situ, we have been able to apply uniaxial stresses of up to nearly 2 GPa with the sample deformation remaining elastic, corresponding to a strain of over 1%. Such large strains almost certainly drive one of the Fermi surfaces through a Lifshitz transition, and associated Van Hove singularity in the density of states. Corresponding to this transition, there are prominent anomalies in resistivity, T_c, H_{c2}, and magnetic susceptibility. The strong enhancement in H_{c2} suggests an even-parity superconducting order parameter at the Van Hove singularity, however there remains compelling experimental evidence that the order parameter is odd-parity at low strains.

Host: Yoshiteru Maeno [Kyoto University/Core Research Group A01]
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